

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

ORDER NO. 00-024

WASTE DISCHARGE REQUIREMENTS
AND
CLOSURE / POST CLOSURE MAINTENANCE
FOR
UNITED STATES DEPARTMENT OF INTERIOR,
BUREAU OF LAND MANAGEMENT, OWNER/LESSOR
COUNTY OF SAN BERNARDINO
WASTE SYSTEM DIVISION, OPERATOR/LESSEE
TWENTYNINE PALMS SANITARY LANDFILL
CLASS III LANDFILL
Twentynine Palms - San Bernardino County

36-AA-0060

The California Regional Water Quality Control Board, Colorado River Basin Region, finds that:

1. The County of San Bernardino, 222 West Hospitality Lane, San Bernardino, CA 92415-0017 (hereinafter referred to as the discharger), is the operator and the lessee of the Twentynine Palms Sanitary Landfill (hereinafter referred to as the Landfill), located approximately five miles east of Twentynine Palms and one mile south of Highway 62.
2. The United States Department of the Interior, Bureau of Land Management (BLM) (hereinafter also referred to as the discharger) with the physical address at 63500 Garnet Avenue, North Palm Springs, California, 92258, and mailing address at P.O. Box 2000, North Palm Springs 92258, is the lessor and the owner of the property known as Twentynine Palms Sanitary Landfill, Twentynine Palms, California.
3. Definitions of terms used in this Board Order:
 - a. Waste Management Facility (WMF) - The entire parcel of property at which waste discharge operations are conducted.
 - b. Waste Management Unit (WMU) - An area of land or portion of a waste management facility at which waste is discharged. The term includes containment features and ancillary features for precipitation and drainage control, and monitoring appurtenances.
 - c. Discharger - Discharger means any person who discharges waste that could affect the quality of waters of the State, and includes any person who owns the land, waste management unit, or who is responsible for the operation of a waste management unit.

4. On November 1, 1995, Norcal Waste Systems, Inc., 222 West Hospitality Lane, Second Floor, San Bernardino, California 92408-3220, assumed operation of all San Bernardino County landfills. In a letter to the Regional Board's Executive Officer from Gerry Newcombe, Contract Administrator for the San Bernardino County Waste System Division, dated October 10, 1996, the County indicated that it has full responsibility for all activities conducted at County landfills undertaken by Norcal. The County specified that this applies even if these activities violate waste discharge requirements or the conditions of Norcal's contract with the County, whether or not the County has approved the activities, and whether the activities are legal or illegal. Therefore, it is appropriate to name San Bernardino County as a discharger for the Landfill.
5. The Landfill property is comprised of approximately 71 acres of which approximately 39 acres have been landfilled.
6. The Twentynine Palms Waste Management Facility (WMF) is located in a portion of the NW ¼ of unsurveyed future Section 5, T1S, R10E, SBB&M approximately five miles east of Twentynine Palms and about one mile south of Highway 62, as shown in Attachments A, B and C.
7. The landfill operated as a burn site from 1954 to 1972, after which the burning of refuse was no longer permitted. In 1972, the landfill became subject to Waste Discharge Requirements (WDRs) under Board Order No. 72-040. The WDRs have been updated three times as follows:

Year:	Board Order No:
1977	77-074
1984	84-096
1990	90-020

8. On September 15, 1993, the WDRs were amended when Board Order No. 93-071 incorporating RCRA, Subtitle D was adopted by the Regional Board.
9. The Landfill is currently regulated by Waste Discharge Requirements under Board Order Nos. 90-020 and 93-071. These waste discharge requirements are being updated to incorporate applicable closure requirements of combined State Water Resources Control Board/California Integrated Waste Management Board regulations, Division 2, Title 27 (hereinafter referred to as Title 27) and closure and post-closure regulations of Section 258.6, Subpart F of Resources Conservation and Recovery Act, Subtitle D (hereinafter referred to as to RCRA Subtitle D).
10. The Landfill is located on Quaternary alluvial fan deposits at the base of Twentynine Palms Mountain in the Pinto Mountain Range. The surface beneath the Landfill slopes gently northeastward toward Dale Valley at a gradient of two to five percent. Surface elevation ranges from 1,940 feet above mean sea level (MSL) at the northeast corner of the Landfill to 2,145 feet above MSL at the southwest corner of the Landfill. Fill elevations range from 1,970 feet above MSL at the landfill base to 2,060 feet above MSL at the landfill crest, as shown on Attachment D.

11. The WMF is underlain by Quaternary Older Alluvium derived from the eroding mountains to the south. The Older Alluvium consists of unconsolidated sand and gravel with some interbedded silt. Terrace Deposits comprised of semi-consolidated gravelly sand and silty clay underlie the alluvium. The thickness of the alluvial sediments in the vicinity of the landfill exceeds 615 feet.
12. The Landfill is located in a seismically active area with numerous active or potentially active faults occurring within 30 miles. The Pinto Mountain fault is located less than one mile from the Landfill. The Camp Rock-Emerson, Johnson Valley, and Homestead Valley faults, along which movement occurred during the 1992 "Landers" earthquake, are located between five and 20 miles north of the Landfill, as shown on Attachment E.
13. On October 19, 1997 the discharger submitted a static and dynamic slope stability analysis report for the monolithic soil cover. The report indicated the monolithic cover can tolerate accelerations from seismic events on faults 5 to 30 miles from the WMF.
14. The land within 1,000 feet north of the property boundary is designated as Rural Living, and to the east, west and south as Resource Conservation. There are no industries located within one mile of the WMF however there are two residential homes (one uninhabited) within 1,000 feet north of the site. A pistol and rifle club is located adjacent to the WMF to the west, and Twentynine Palms Airport is located within one mile to the east, as shown on Attachment F.
15. The discharger proposed the post-closure end use of the Landfill to be non-irrigated open space.
16. The Landfill is not lined and has no leachate collection and removal system.
17. The Landfill stopped receiving waste on September 30, 1998. Two feet of soil was placed on the Landfill surface as intermediate cover.
18. Approximately 1.23 million cubic yards of non-hazardous solid waste and daily cover were disposed of at the Landfill. Non-hazardous solid wastes include:
 - a. Residential
 - b. Commercial
 - c. Construction demolition
19. Presently the WMF operates as a transfer station.
20. The WMF contained three contiguous unlined septage drying ponds as shown on Attachment G. These ponds were closed on May 28, 1998 after wastes were removed.
21. The discharger reports a stormwater monitoring program was developed for the Landfill in compliance with the National Pollutant Discharge Elimination System (NPDES).
22. The discharger reports that the 100-year rainfall intensity for the Landfill is 3.6 inches/hour with peak flow rate of 125.0 cubic feet per second.
23. The site is not within the 100-year flood plain.
24. Average annual evaporation and precipitation rates are 80 and 4 inches respectively.

25. The discharger submitted a Solid Waste Assessment Test (SWAT) report in April 1991. Five point of compliance ground water monitoring wells were installed for the SWAT investigation, as shown on Attachment G.
26. Analyses of ground water samples collected from SWAT compliance wells TNP-5 and TNP-6 indicated the Landfill was affecting ground water quality. The highest contaminant concentrations detected from the 1991 SWAT investigation were:

<u>Parameter</u>	<u>Concentration</u> <u>µg/L</u>	<u>Maximum Concentration Limit</u> <u>µg/L</u>
Tetrachloroethene (PCE)	8.1	5.0
1,1,1-Trichloroethane	0.7	200.0
Trichloroethene (TCE)	0.6	5.0
Dichlorodifluoromethane	1.3	-----

27. On May 3, 1995, the Regional Board received an Evidence of a Release Notification from the San Bernardino County Solid Waste Management Department stating that both statistical, and non-statistical releases were identified on April 26, 1995 at the Twentynine Palms Landfill. One volatile organic compound (VOC) 1, 1, 1, 2, - Tetrachloroethane was detected at 2.1 µg/L. The notification indicated that a discrete retest would be performed within 30 days (by May 26, 1995) in accordance with Section 13(f)(3) of Board Order 93-071.
28. On June 26, 1995, the Regional Board received the results of the constituents of concern (COC) scan conducted on ground water samples collected from the Landfill monitoring wells on May 22 and 25, 1995. The COC scan detected Tetrachloroethene in monitoring well TNP-5 and Trichloroethene in monitoring well TNP-7.
29. The discharger submitted an Evaluation Monitoring Program (EMP) work plan on July 26, 1995. The EMP was deemed acceptable by the Regional Board's Executive Officer on October 26, 1995.
30. The Regional Board's Executive Officer issued Cleanup and Abatement Order (CAO) No. 95-114 on October 25, 1995.
31. As part of the EMP, the discharger performed the following tasks between March and October 1995:
 - a. Exploratory boring B-1 was drilled on September 18 and 19, 1995, to recover soil samples for laboratory analysis.
 - b. Two additional ground water monitoring wells (TNP-8 and TNP-9) were installed. Soil samples were recovered during drilling and submitted for laboratory analysis.
 - c. Ground water sampling at the two new wells was performed on November 20, 1995.
 - d. Vadose zone gas samples were recovered from ground water monitoring wells.

32. The discharger submitted a Preliminary Engineering Feasibility Study (EFS) on October 25, 1995. The EFS provided a detailed description of the proposed corrective action measures.
33. On July 30, 1997, the Regional Board's Executive Officer issued CAO No. 97-116 revising CAO No. 95-114.
34. The discharger installed ground water monitoring well TNP-10 in January 1998, to replace monitoring well TNP-9 which showed high concentrations of acetone reportedly introduced during well development.
35. On December 23, 1998, the discharger submitted a report that included the EFS. The report indicated that pollutant concentrations in ground water were stable and below Maximum Contaminant Levels (MCLs).
36. In November 1995, the discharger began submitting monthly status reports discussing EMP implementation to the Regional Board.
37. The discharger reports that designating point of compliance wells varies due to seasonal fluctuations in ground water flow direction.
38. The Water Quality Control Plan for the Colorado River Basin Region of California (Basin Plan) was adopted on November 17, 1993, and designates the beneficial uses of ground and surface waters in this Region.
39. The WMF is located in the Dale Hydrologic Unit.
40. The beneficial uses of ground waters in the Dale Hydrologic Unit are:
 - a. Municipal supply (MUN)
 - b. Industrial supply (IND)
 - c. Agricultural supply (AGR)
41. The discharger submitted a Final Closure/Post Closure Maintenance Plan (FCPCMP) on November 18, 1996, and revised FCPCMP on August 19, 1997. The FCPCMP was approved by Regional Board staff on March 8, 2000.
42. The FCPCMP proposes the following:
 - I. CLOSURE
 - a. Final cover – the discharger has proposed an alternative cover in accordance with Title 27. The proposed final cover consists of, in ascending order:
 - i. Foundation Layer – A minimum two-foot thick foundation layer of selected soil materials.
 - ii. Monolithic layer – A two and one half-foot thick layer of selected soil materials that will comprise the monolithic vegetative cover layer.
 - b. Final cover on the top deck of the Landfill has a minimum 2.35 percent grade as shown on Attachment H.

- c. Side slopes of the final cover have a maximum slope of three horizontal to one vertical (3H : 1V).
- d. Erosion of the final cover will be prevented by three erosion control features:
 - i. The top deck will be designed with a minimum slope of approximately 2.35 percent;
 - ii. Planting native grass and shrubs to establish a vegetative cover;
 - iii. Drill-seeding, or manually seeding and mulching the 3H : 1V side slopes.
- e. The Landfill began operating in 1954. Analyses done by the discharger indicate that significant settlement occurred prior to closure. Maximum post-closure settlement is estimated to be only two feet for the majority of the Landfill. The discharger proposes to install five monuments. Two settlement monuments will be placed on the Landfill, and three survey monuments will be placed along the Landfill perimeter (outside the buried waste) for use as reference points. The discharger proposes to perform an aerial photographic survey of the site with a maximum contour interval of two feet. The settlement monuments will be surveyed upon completion of all closure construction activity. The discharger will survey the entire refuse footprint every five years through out the post-closure maintenance period.
- f. Precipitation falling on the Landfill deck will be channeled by perimeter berms that direct surface flow to downdrains. The downdrains will consist of alternative cover trapezoidal channels. Surface flow from the slopes will be collected by bench drains and directed to alternative cover trapezoidal downdrains. Collected surface flows will be discharged to two outlets located at the northeast and north edge of the Landfill. These outlets will be constructed with rip-rap pads where the flows will be dispersed by energy dissipation to reduce erosion. The precipitation outside the boundary of the Landfill will be diverted away from the landfill by berms.
- g. The discharger reports that during the 30-year post-closure maintenance period, the average soil loss over the entire Landfill will be approximately 0.31 inches. Any soil loss will be refilled to its design status.
- h. The eight ground water monitoring wells: TNP-3, TNP-4, TNP-5, TNP-6, TNP-7, TNP-8, TNP-9, and TNP-10, will be monitored during the closure and post-closure maintenance period.
- i. Vadose zone gas at the Landfill will be monitored by three dual-depth soil pore gas monitoring probes (TNPG-1, TNPG-2, and TNPG-3). Attachment G shows the location of ground water monitoring wells, and vadose zone gas probes.

II. POST CLOSURE MAINTENANCE

- a. The discharger will inspect the Landfill for the following:

Inspection Period

- | | |
|--|---------|
| 1. Landfill Gas Migration System Monitoring and Maintenance. | Monthly |
| 2. Groundwater System Monitoring and Maintenance. | Monthly |
| 3. Stormwater Monitoring. | Monthly |
| 4. Final Cover Inspection and Maintenance. | Monthly |
| 5. Settlement Monitoring and Maintenance. | Monthly |
| 6. Vegetative Cover Inspection and Maintenance. | Monthly |
| 7. Access Road Inspection and Maintenance. | Monthly |
| 8. Drainage Control System Inspection and Maintenance. | Monthly |
| 9. Site Security Inspection and Maintenance | Monthly |

Appropriate measures will be taken to repair and correct any damage observed at the Landfill.

- b. Settlement inspections will be done every five years throughout the post-closure maintenance period. Any settlement of the cover system will be appropriately mitigated in a manner acceptable to the Regional Board's Executive Officer.
43. The discharger prepared an Initial Study and proposed Mitigated Negative Declaration to meet the state requirement of the California Environmental Quality Act (Public Resources Code, Section 21108 et seq.). The Mitigated Negative Declaration was approved by the San Bernardino County Board of Supervisors on June 22, 1998. The water quality or related water quality impacts identified during the environmental assessment for the Mitigated Negative Declaration are given below, followed by mitigation measures addressed in this Board Order.
- a. Potential impact: The project has less than significant impact to erode the soils on or off the Landfill due to any increase in wind or water.

Mitigation: Specifications 5, 10 (II), 11, 12, 13, 14, and Provisions 11, 14, and 16.

44. The Board has notified the discharger and all known interested agencies and persons of its intent to update waste discharge requirements for this discharge and has provided them with an opportunity for a public meeting and an opportunity to submit comments.
45. The Board, in a public meeting, heard and considered all comments pertaining to this discharge.
46. The Regional Board finds that the 39-acre landfill project is in compliance with the provisions of Title 27, as well as 40 CFR Parts 257 and 258, Subtitle D.

IT IS HEREBY ORDERED, that Board Order No. 90-020 is rescinded, and in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, the discharger shall comply with the following:

A. Specifications

1. The treatment or disposal of wastes at this facility shall not cause pollution or nuisance as defined in Section 13050 of Division 7 of the California Water Code.
2. Waste material shall be confined to the waste management facility as defined in Finding No. 3(a) and described in the attached site maps.
3. The discharge shall not cause degradation of any water supply.
4. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources, shall not contact or percolate through wastes discharged at this site.
5. The exterior surfaces of the disposal area, including the intermediate and final landfill covers shall be graded and maintained to promote lateral runoff or precipitation and to prevent ponding.
6. The discharger shall use the constituents listed in Monitoring and Reporting Program No. 00-024 and revisions thereto, as "monitoring parameters". These monitoring parameters are subject to the most appropriate statistical or non-statistical tests under Monitoring and Reporting Program No. 00-024, Part III, and any revised Monitoring and Reporting Program approved by the Regional Board's Executive Officer.
7. The discharger shall implement the attached Monitoring and Reporting Program No. 00-024 and revisions thereto in order to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the Landfill, or any unreasonable impairment of beneficial uses associated with (caused by) discharges of waste to the Landfill.
8. The discharge shall not cause the concentration of any Constituent of Concern or Monitoring Parameter to exceed its respective background value in any monitored medium at any Monitoring Point assigned to Detection Monitoring pursuant to Part II.B.4. of the attached Monitoring and Reporting Program No. 00-024 and revisions thereto.
9. The discharger shall follow the Water Quality Protection Standards (WQPS) for detection monitoring established by the Regional Board in this Board Order pursuant to Title 27, Section 20390. The following are five parts of WQPS as established by the Regional Board (the terms of art used in this Board Order regarding monitoring are defined in Part I of the attached Monitoring and Reporting Program No. 00-024, and revisions thereto, which is hereby incorporated by reference):
 - a. The discharger shall test for the monitoring parameters and the Constituents of Concern (COC) listed below and in the Monitoring and Reporting Program No. 00-024 and revisions thereto for:

Constituents

1. pH (units)
 2. Total Dissolved Solids
 3. Specific Conductance
 4. Temperature
 5. Chloride
 6. Sulfate
 7. Nitrate (as N)
 8. Ground Water Elevation
 9. Volatile Organics
- b. Concentration Limits - The concentration limit for each monitoring parameter and constituents of concern for each monitoring point (as stated in detection Monitoring Program Part II), shall be its background value as obtained during that reporting period.
- c. Monitoring points and background monitoring points for detection monitoring shall be those listed below and in Part II. B. of the attached Monitoring and Reporting Program No. 00-024, and any revised Monitoring and Reporting Program approved by the Regional Board's Executive Officer. Monitoring and background monitoring points are shown below and on Attachment G:
- i. Background Point TNP-4, and TNP-6
 - ii. Point of Compliance TNP-3, TNP-5, TNP-6, TNP-7, TNP-8, TNP-9 and TNP-10
- d. Compliance period - The estimated duration of the compliance period for this Landfill is six (6) years. Each time the Standard is not met (i.e. releases discovered), the Landfill begins a compliance period on the date the Regional Board directs the discharger to begin an Evaluation Monitoring Program. If the discharger's Corrective Action Program (CAP) has not achieved compliance with the standard by the scheduled end of the Compliance Period, the Compliance period is automatically extended until the Landfill has been in continuous compliance for at least three consecutive years.
10. The discharger shall install a monolithic cover consisting of the following, in ascending order:
- i. A minimum two-foot thick foundation layer of selected soil materials.
 - ii. A minimum two and one half-foot thick layer of selected soil materials that shall comprise the monolithic vegetative cover layer.
11. The discharger shall follow the proposed FCPCMP listed in Finding No. 42.
12. The discharger shall conduct a routine and periodic inspection as listed in Finding No. 42.
13. A thorough and comprehensive inspection shall be conducted by the discharger at least twice a year and immediately after any special events such as earthquakes, storms, or fires.
14. The discharger shall within 30 days, repair and restore to design conditions, and in accordance with construction specification, any deficiencies, damages to, or failure of the final cover, final grade, side slopes, drainage system, settlement, and monitoring systems.

15. The discharger shall install at a minimum, two settlement monuments on the Landfill and three survey monuments on the ground for monitoring refuse settlement at the Landfill. Also the entire permitted site shall be aerially photographed at the end of the closure activities and every five years throughout the post closure maintenance period.
16. The discharger shall remove and relocate any wastes that are discharged at this site in violation of these requirements.
17. Water used for site maintenance shall be limited to amounts necessary for dust control.
18. The Landfill shall be protected from any washout or erosion of wastes or covering material, and from any inundation which could occur as a result of floods having a predicted frequency of once in 100 years.
19. The discharge shall not cause the release of pollutants or waste constituents in a manner which could cause a condition of contamination or pollution to occur, as indicated by the most appropriate statistical (or non-statistical) data analysis method and retest method listed in Part III of the attached Monitoring and Reporting Program No. 00-024 and revisions thereto.

B. Prohibitions

1. The discharge or deposit of solid waste at this site is prohibited.
2. The discharge or deposit of designated waste (as defined in Title 27) at this site is prohibited unless approved by the Regional Board's Executive Officer.
3. The co-disposal of incompatible wastes is prohibited.
4. The discharge of waste to land not owned or controlled by the discharger is prohibited.
5. The discharge shall neither cause nor contribute to the contamination or pollution of ground water via the release of waste constituents in either liquid or gaseous phase.
6. The direct discharge of any waste to any surface waters or surface drainage courses is prohibited.
7. The discharge of liquid or semi-solid waste (i.e., waste containing less than 50 percent solids) to the Landfill is prohibited unless approved by the Regional Board's Executive Officer.

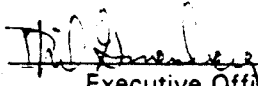
C. Provisions

1. The discharger shall comply with "Monitoring and Reporting Program No. 00-024", and future revisions thereto, as specified by the Regional Board's Executive Officer.
2. Prior to any change in ownership or management of this operation, the discharger shall transmit a copy of this Board Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Regional Board.
3. The discharger shall ensure that all site-operating personnel are familiar with the content of this Board Order, and shall maintain a copy of this Board Order at the site.

4. This Board Order does not authorize violation of any federal, state, or local laws or regulations.
5. The discharger shall allow the Regional Board, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:
 - a. Enter upon the premises regulated by this Board Order, or the place where records must be kept under the conditions of this Board Order;
 - b. Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this Board Order;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Board Order; and
 - d. Sample or monitor at reasonable times, for the purpose of assuring compliance with this Board Order or as otherwise authorized by the California Water Code, any substances or parameters at this location.
6. The discharge shall neither cause nor contribute to the contamination or pollution of ground water via the release of waste constituents in either liquid or gaseous phase.
7. The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil or other geologic materials outside the Landfill, if such waste constituents could migrate to waters of the State in either the liquid or the gaseous phase, and cause conditions of contamination or pollution.
8. This Board Order does not convey any property rights of any sort or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations.
9. Unless otherwise approved by the Regional Board's Executive Officer, all analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. All analyses shall be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants", promulgated by the United States Environmental Protection Agency.
10. All regulated disposal systems shall be readily accessible for sampling and inspection.
11. Adequate measures shall be taken to assure that flood or surface drainage waters do not erode or otherwise render portions of the discharge facilities inoperable.
12. The discharger is the responsible party for the waste discharge requirements and the monitoring and reporting program for the facility. The discharger shall comply with all conditions of these waste discharge requirements. Violations may result in enforcement actions, including Regional Board Orders or court orders, requiring corrective action or imposing civil monetary liability, or in modification or revocation of these waste discharge requirements by the Regional Board.
13. The discharger shall furnish, under penalty of perjury, technical monitoring program reports, and such reports shall be submitted in accordance with the specifications prepared by the Regional Board's Executive Officer. Such specifications are subject to periodic revisions as may be warranted.

14. All containment structures and erosion and drainage control systems shall be designed and constructed under direct supervision of a California-Registered Civil Engineer or Certified Engineering Geologist, and shall be certified by the individual as meeting the prescriptive standards and performance goals of Title 27.
15. After a significant earthquake event, the discharger shall:
 - a. Immediately notify the Regional Board by phone; and
 - b. Within seven days submit to the Regional Board a detailed post-earthquake report describing any physical damages to the containment features, ground water monitoring and/or leachate control facilities and a corrective action plan to be implemented at the landfill.
16. The discharger shall immediately notify the Regional Board of any flooding, slope failure or other change in site conditions which could impair the integrity of waste containment facilities or of precipitation and drainage control structures. The discharger shall submit to the Regional Board within 14 days, a detailed report describing any physical damage to the cover, surface water diversion systems or ground water monitoring systems.
17. The discharger shall maintain legible records on the volume and type of each waste discharged at the site. These records shall be available for review by representatives of the Regional Board at any time during normal business hours. At the beginning of the post-closure maintenance period copies of these records shall be sent to the Regional Board.
18. The discharger shall maintain visible monuments identifying the boundary limits of the entire waste management facility.
19. The discharger shall submit to this Regional Board and to the California Integrated Waste Management Board, evidence of Financial Assurance for Closure and Post Closure, pursuant to Title 27, Chapter 6. The post-closure period shall be at least 30 years. However, the post-closure maintenance period shall extend as long as the wastes pose a threat to water quality.
20. Within 180 days of the adoption of this Board Order, the discharger shall submit to the California Integrated Waste Management Board in accordance with Title 27, Chapter 6, assurance of financial responsibility in an amount acceptable to the Regional Board's Executive Officer for initiating and completing corrective action for all known or reasonably foreseeable releases from the landfill.
21. This Board Order is subject to Regional Board review and updating as necessary to comply with changing State or Federal laws, regulations, policies, or guidelines, or changes in the discharge characteristics.

I, Philip A. Gruenberg, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on June 28, 2000.



Executive Officer

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION**

**MONITORING AND REPORTING PROGRAM NO. 00-024
FOR**

**UNITED STATES DEPARTMENT OF INTERIOR,
BUREAU OF LAND MANAGEMENT, OWNER/LESSOR
THE COUNTY OF SAN BERNARDINO
CLOSURE AND POST CLOSURE MAINTENANCE
WASTE SYSTEM DIVISION OPERATOR/LESSEE
TWENTYNINE PALMS SANITARY LANDFILL
CLASS III LANDFILL
East of Twentynine Palms - San Bernardino County**

CONSISTS OF

PART I, PART II AND PART III

PART I

A. GENERAL

Responsibilities of dischargers are specified in Section 13225(a), 13267(b) and 13387(b) of the California Water Code, and the State Water Resources Control Board's Resolution No. 93-062. This self-monitoring program is issued pursuant to Provision No. 1 of Regional Board Order No. 00-024. The principal purposes of a self-monitoring program by a waste discharger are:

1. To document compliance with discharge requirements and prohibitions established by the Regional Board;
2. To facilitate self-policing by the waste discharger in the prevention and abatement of pollution arising from waste discharge;
3. To prepare water quality analyses;
4. To prepare vadose zone (unsaturated zone) gas, if applicable, and liquid quality analyses.

B. DEFINITION OF TERMS

1. The "Monitored Media" are those water and/or gas-bearing media that are monitored pursuant to this Monitoring and Reporting Program. The Monitored Media may include: (1) ground water in the uppermost aquifer, in any other portion of the zone of saturation (Title 27, Section 20164) in which it would be reasonable to anticipate that waste constituents migrating from the Unit could be detected, and in any perched zones underlying the Unit, (2) any bodies of surface water that could be measurably affected by a release, (3) soil-pore liquid beneath and/or adjacent to the Unit, and (4) soil-pore gas beneath and/or adjacent to the Unit.
2. The "Constituents of Concern (COC)" are those constituents which are likely to be in the waste in the Unit or which are likely to be derived from waste constituents, in the event of a release.
3. The "Monitoring Parameters" consists of a short list of constituents and parameters used for the majority of monitoring activity.
4. The "Volatile Organics Composite Monitoring Parameter for Water (VOC_{water})" and the "Volatile Organics Composite Monitoring Parameter for Soil-Pore Gas (VOC_{spg})" are composite Monitoring Parameters addressing all volatile organic constituents detectable in a sample of water or soil-pore gas, respectively. (See Part III.A.2. of this Program for additional discussion of these Monitoring Parameters).
5. "Standard Observations" refers to:
 - a. For Receiving Waters:
 1. Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;

2. Discoloration and turbidity: description of color, source, and size of affected area;
 3. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
 4. Evidence of beneficial use: presence of water-associated wildlife;
 5. Flow rate; and
 6. Weather conditions: wind direction and estimated velocity, total precipitation during the previous five days and on the day of observation.
- b. Along the perimeter of the Landfill:
1. Evidence of liquid leaving or entering the Landfill, estimated size of affected area, and flow rate (show affected area on map);
 2. Evidence of odors: presence or absence, characterization, source, and distance of travel from source; and
 3. Evidence of erosion and/or of exposed refuse.
- c. For the Landfill:
1. Evidence of ponded water at any point on the waste management facility (show affected area on map);
 2. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
 3. Evidence of erosion and/or of daylighted refuse; and
 4. "Standard Analysis and Measurements", which refers to:
 - a. Turbidity (only for water samples) in NTU;
 - b. Water elevation to the nearest 1/100th foot above mean sea level (only for ground water monitoring); and
 - c. Sampling and statistical/non-statistical analysis of the Monitoring Parameters.
6. "Matrix Effect" refers to any increase in the Method Detection Limit or Practical Quantitation Limit for a given constituent as a result of the presence of other constituents - either of natural origin or introduced through a release - that are present in the sample of water or soil-pore gas being analyzed.

7. "Facility-Specific Method Detection Limit (MDL)", for a given analytical laboratory using a given analytical method to detect a given constituent (in spite of any Matrix Effect) means the lowest concentration at which the laboratory can regularly differentiate - with 99% reliability - between a sample which contains the constituent and one which does not.
8. "Facility-Specific Practical Quantitation Limit (PQL)", for a given analytical laboratory using a given analytical method to determine the concentration of a given constituent (in spite of any Matrix Effect) means the lowest constituent concentration the laboratory can regularly quantify within specified limits of precision that are acceptable to the Regional Board's Executive Officer.
9. "Reporting Period" means the duration separating the submittal of a given type of monitoring report from the time the next iteration of that report is scheduled for submittal. Therefore, the reporting period for monitoring parameters is quarterly, and the reporting period for Constituents of Concern is every five years. An annual report, which is a summary of all the monitoring during the previous year, shall also be submitted to the Regional Board. The submittal dates for each reporting period shall be as follows:
 - a. Quarterly Monitoring Reports
 1. First quarter (January, February, and March) - report due by April 30
 2. Second quarter (April, May and June) - report due July 31
 3. Third quarter (July, August and September) - report due by October 31
 4. Fourth quarter (October, November and December) - report due by February 15
 - b. Annual Summary Report

January 1 through December 31 - report due on February 15

C. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA methods, and in accordance with an approved sampling and analysis plan. Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. Specific methods of analysis must be identified. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Regional Board's Executive Officer prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Regional Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements. In addition, the discharger is responsible for seeing that the laboratory analysis of all samples from Monitoring Points and Background Monitoring Points meets the following restrictions:

- a. The methods and analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e. "trace" or "ND") in data from Background Monitoring Points for that medium, the analytical methods having the lowest "facility-specific method detection limit (MDL)", defined in Part I.C.7., shall be selected from among those methods which would provide valid results in light of any "Matrix Effects" (defined in Part I.B.6.) involved.

- b. "Trace" results, results falling between the MDL and the facility-specific practical quantitation limit (PQL), shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run and by an estimate of the constituent's concentration.
- c. MDLs and PQLs shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with an estimate of the detection limit and quantitation limit actually achieved.
- d. All QA/QC data shall be reported, along with the sample results to which it applies, including the method, equipment, and analytical detection limits, the recovery rates, an explanation of any recovery rate that is less than 80%, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recovery.
- e. Upon receiving written approval from the Regional Board's Executive Officer, an alternative statistical or non-statistical procedure can be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Reporting Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Board staff.
- f. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.
- g. In cases where contaminants are detected in QA/QC samples (i.e. field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
- h. The MDL shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result.

D. RECORDS TO BE MAINTAINED

Written reports shall be maintained by the discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board. Such records shall show the following for each sample:

1. Identity of sample and of the Monitoring Point or Background Monitoring Point from which it was taken, along with the identity of the individual who obtained the sample;
2. Date and time of sampling;

3. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
5. Calculations of results; and
6. Results of analyses, and the MDL and PQL for each analysis.

E. REPORTS TO BE FILED WITH THE BOARD

1. A written "Detection Monitoring Report" shall be submitted quarterly (Part II.A.2.), in addition to an "Annual Summary Report" (Part I.E.3.). Every five years, the discharger shall submit a report concerning the direct analysis of all Constituents of Concern as indicated in Part II.A.3. ("COC Report"). First, second, and third quarterly reports shall be submitted no later than one month and fourth quarter and annual reports shall be submitted no later than 46 days of their respective Monitoring Period. The reports shall be comprised of at least the following:

- a. Letter of Transmittal

A letter transmitting the essential points in each report shall accompany each report. Such a letter shall include a discussion of any requirement violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice-president or above, or by his/her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct;

- b. Each Detection Monitoring Report and each COC Report shall include a compliance evaluation summary. The summary shall contain at least:

- i. For each monitored ground water body, a description and graphical presentation of the velocity and direction of the ground water flow under/around the Unit, based upon water level elevations taken during the collection of the water quality data submitted in the report;
- ii. Pre-Sampling Purge for Samples Obtained From Wells: For each monitoring well addressed by the report, a description of the method and time of water level measurement, of the type of pump used for purging and the placement of the pump in the well, and of the method of purging (the pumping rate, the equipment and methods used to monitor field pH, temperature, and conductivity during purging, the calibration of the field equipment, results of the pH, temperature, conductivity, and turbidity testing, the well recovery time, and the method of disposing of the purge water);

- iii. **Sampling:** For each Monitoring Point and Background Monitoring Point addressed by the report, a description of the type of pump - or other device - used and its placement for sampling, and a detailed description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations);
- c. A map or aerial photograph showing the locations of observation stations, Monitoring Points, and Background Monitoring Points;
- d. For each Detection Monitoring Report and each COC Report, include laboratory statements of results of all analyses demonstrating compliance with Part I.B.;
- e. An evaluation of the effectiveness of the run-off/run-on control facilities;
- f. A summary and certification of completion of all Standard Observations (Part I.C.7.) for the Unit, for the perimeter of the Unit, and for the Receiving Waters; and

2. CONTINGENCY REPORTING

- a. The discharger shall report by telephone concerning any seepage from the disposal area immediately after it is discovered. A written report shall be filed with the Regional Board within seven days, containing at least the following information:
 - 1. A map showing the location(s) of seepage;
 - 2. An estimate of the flow rate;
 - 3. A description of the nature of the discharge (e.g., all pertinent observations and analyses); and
 - 4. Corrective measures underway or proposed.
- b. Should the initial statistical comparison (Part III.A.1.) or non-statistical comparison (Part III.A.2.) indicate, for any Constituent or Concern of Monitoring Parameter, that a release is tentatively identified, the discharger shall immediately notify the Regional Board verbally as to the Monitoring Point(s) and constituents(s) or parameter(s) involved, shall provide written notification by certified mail within seven days of such determination (Title 27, Section 20420(j)(1)), and shall carry out a discrete retest in accordance with Parts II.B.1., and III.A.3. If the retest confirms the existence of a release, the discharger shall carry out the requirements of Part I.E.2.d. In any case, the discharger shall inform the Regional Board of the outcome of the retest as soon as the results are available, following up with written results submitted by certified mail within seven days of completing the retest.
- c. If either the discharger or the Regional Board determines that there is significant physical evidence of a release (Title 27, Section 20385(3)), the discharger shall immediately notify the Regional Board of this fact by certified mail (or acknowledge the Regional Board's determination) and shall carry out the requirements of Part I.E.2.d. for all potentially-affected monitored media.

- d. If the discharger concludes that a release has been discovered:
 - i. If this conclusion is not based upon "direct monitoring" of the Constituents of Concern, pursuant to Part II.B.3., then the discharger shall, within thirty days, sample for all Constituents of Concern at all Monitoring Points and submit them for laboratory analysis. Within seven days of receiving the laboratory analytical results, the discharger shall notify the Regional Board, by certified mail, of the concentration of all Constituents of Concern at each Monitoring Point. Because this scan is not to be tested against background, only a single datum is required for each Constituent of Concern at each Monitoring Point (Title 27 Section 2040(k)(1));
 - ii. The discharger shall, within 90 days of discovering the release, submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring Program meeting the requirements of Title 27, Section 20420(k)(5) and 20425; and
 - iii. The discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study meeting the requirements of Title 27, Section 20420(k)(6).
- e. Any time the discharger concludes - or the Regional Board Executive Officer directs the discharger to conclude - that a liquid- or gaseous-phase release from the Unit has proceeded beyond the facility boundary, the discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).
 - i. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the discharger's current knowledge of the nature and extent of the release; and
 - ii. Subsequent to initial notification, the discharger shall provide updates to all Affected Persons - including any newly Affected Persons - within 14 days of concluding there has been any material change in the nature or extent of the release.

3. ANNUAL SUMMARY REPORT

The discharger shall submit an annual report to the Regional Board covering the previous monitoring year. The Reporting Period ends February 15. This report shall contain:

- a. A Graphical Presentation of Analytical Data (Title 27, Section 20415(e)(14)). For each Monitoring Point and Background Monitoring Point, submit in graphical format the laboratory analytical data for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents over time for a given Monitoring Point and Background Monitoring Point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. On the basis of any aberrations noted in the plotted data, the Regional Board's Executive Officer may direct the discharger to carry out a preliminary investigation (Title 27, Section 20080(d)(2)), the results of which will determine whether or not a release is indicated;

- b. All monitoring analytical data obtained during the previous quarterly Monitoring and Reporting Periods, presented in tabular form as well as on 3 1/2" diskettes, either in MS-DOS/ASCII format or in another file format acceptable to the Regional Board's Executive Officer. Data sets too large to fit on a single diskette may be submitted on disk in a commonly available compressed format (e.g., PK-ZIP or NORTON BACKUP). The Regional Board regards the submittal of data in hard copy and on diskette as "...the form necessary for..." statistical analysis (Title 27, Section 20420(h)), in that this facilitates periodic review by the Regional Board's statistical consultant;
- c. A comprehensive discussion of the compliance record, and the result of any correction actions taken or planned which may be needed to bring the discharger into full compliance with the waste discharge requirements;
- d. A written summary of the ground water and soil-pore gas analyses, indicating any changes made since the previous annual report; and
- e. An evaluation of the effectiveness of the run on/run-off control facilities, pursuant to Title 27, Section 20340 (b,c,& d).

PART II: MONITORING AND OBSERVATION SCHEDULE

A. WATER AND SOIL-PORE GAS SAMPLING/ANALYSIS FOR DETECTION MONITORING

Monitoring parameters report due quarterly, constituents of concern reports due every five years (details below):

1. Thirty-Day Sample Procurement Limitation. For any given monitored medium, the samples taken from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given reporting period shall all be taken within a span not exceeding 30 days, and shall be taken in a manner that insures sample independence to the greatest extent feasible (Title 27, Section 20415(e)(12)(B)). Ground water sampling shall also include an accurate determination of the ground water surface elevation and field parameters (temperature, electrical conductivity, turbidity) for that Monitoring Point or Background Monitoring Point (Title 27, Section 20415(e)(13)); ground water elevations taken prior to purging the well and sampling for Monitoring Parameters shall be used to fulfill the Spring and Fall ground water flow rate/direction analyses required under Part II.B.6. Statistical or non-statistical analysis shall be carried out as soon as the data is available, in accordance with Part III of this program.
2. "Indirect Monitoring" for Monitoring Parameters done quarterly. All monitoring points assigned to Detection Monitoring (Part II A.4 below) and all background Monitoring points shall be sampled quarterly during March, June, September and December. Monitoring for Monitoring Parameters shall be carried out in accordance with Part II A.1 and III of this program.
3. "Direct Monitoring" of all Constituents of Concern Every Five Years. In the absence of a release being indicated (1) pursuant to Parts II.A.2. and III.A.3. for a Monitoring Parameter, (2) based upon physical evidence, pursuant to Part I.E.2.c., or (3) by a study required by the Regional Board's Executive Officer based upon anomalies noted during visual inspection of graphically-depicted analytical data (Part I.E.3.a.), then the discharger shall sample all Monitoring Points and Background Monitoring Points of water-bearing media, not including soil-pore gas, for all Constituents of Concern every fifth year, beginning with the year of adoption of this Board Order, with successive direct monitoring efforts being carried out alternately in the Spring of one year (Report Period ends March 31 and June 30) and the Fall of the fifth year thereafter (Reporting Period ends September 30 and December 31). Direct monitoring for Constituents of Concern shall be carried out in accordance with Parts II.A.1. and III of this program, and shall encompass only those Constituents of Concern that do not also serve as a Monitoring Parameter.
4. "Monitoring Points and Background Monitoring Points for Each Monitored Medium": The discharger shall sample the following Monitoring Points and Background Monitoring Points in accordance with the sampling schedule given under Parts II.B.2 and II A.3. (immediately foregoing), taking enough samples to qualify for the most appropriate test under Part III.
 - a. For ground water in the uppermost aquifer: The Monitoring Points shall be Point of Compliance wells TNP-3, TNP-5, TNP-7, TNP-8, TNP-9, and TNP-10 The background Monitoring Points shall be wells TNP-4 and TNP-6.

5. Initial Background Determination: For the purpose of establishing an initial pool of background data for each Constituent of Concern at each Background Monitoring Point in each monitored medium Title 27, Section 20415(e)(6).
- a. Whenever a new Constituent of Concern is added to the Water Quality Protection Standard, including any added by the adoption of this Board Order, the discharger shall collect at least one sample semi-annually for at least one year from each Background Monitoring Point in each monitored medium and analyze for the newly-added constituent(s); and
 - b. Whenever a new Background Monitoring Point is added, including any added by this Board Order, the discharger shall sample it at least semi-annually for at least one year, analyzing for all Constituents of Concern and Monitoring Parameters.
6. Quarterly Determination of Ground Water Flow Rate/Direction (Title 27, Section 25415(e)(15)): The discharger shall measure the water level in each well and determine ground water flow rate and direction in each ground water body described in Part II.A.4. at least quarterly, including the times of expected highest and lowest elevations of the water level for the respective ground water body. This information shall be included in the quarterly monitoring reports required under Part II.A.2.

**PART III: STATISTICAL AND NON-STATISTICAL ANALYSES OF SAMPLE DATA
DURING A DETECTION MONITORING PROGRAM**

- A. The discharger shall use the following methods to compare the downgradient concentration of each monitored constituent or parameter with its respective background concentration to determine if there has been a release from the Unit. For any given data set, proceed sequentially down the list of statistical analysis methods listed in Part III.A.1., followed by the non-statistical method in Part III.A.2., using the first method for which the data qualifies. If that analysis tentatively indicates the detection of a release, implement the retest procedure under Part III.A.3.
1. Statistical Methods. The discharger shall use one of the following statistical methods to analyze Constituents of Concern or Monitoring Parameters which exhibit concentrations exceeding their respective MDL in at least ten percent of the background samples taken during that Reporting Period. Each of these statistical methods is more fully described in the Statistical Methods Discussion which is attached to this Program and is hereby incorporated by reference. Except for pH, which uses a two-tailed approach, the statistical analysis for all constituents and parameters shall be one-tailed (testing only for statistically significant increase relative to background):
- a. One-Way Parametric Analysis of Variance ANOVA followed by multiple comparisons (Section 2550.7(e)(8)(A)). This method requires at least four independent samples from each Monitoring Point and Background Monitoring Point during each sampling episode. It shall be used when the background data from the parameter of constituent, obtained during a given sampling period, has not more than 15% of the data below PQL. Prior to analysis, replace all 'trace' determinations with a value halfway between the PQL and the MDL values reported for that sample run, and replace all "non-detect" determinations with a value equal to half the MDL value reported for that sample run. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the discharger shall conclude that a release is tentatively indicated from that parameter or constituent;
 - b. One-Way Non-Parametric ANOVA (Kruskal-Wallis Test), followed by multiple comparisons. This method requires at least nine independent samples from each Monitoring Point and Background Monitoring Point; therefore, the discharger shall anticipate the need for taking more than four samples per Monitoring Point, based upon past monitoring results. This method shall be used when the pooled background data for the parameter or constituent, obtained within a given sampling period, has not more than 50% of the data below the PQL. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis (i.e., that there is no release) to be rejected at any Monitoring Point, the discharger shall conclude that a release is tentatively indicated for that parameter or constituent; or

- c. Method of Proportions. This method shall be used if the "combined data set", the data from a given Monitoring Point in combination with the data from the Background Monitoring Points, has between 50% and 90% of the data below the MDL for the constituent or parameter in question. This method (1) requires at least nine downgradient data points per Monitoring Point per Reporting Period, (2) requires at least thirty data points in the combined data set, and (3) requires that $N * P > 5$ (where N is the number of data points in the combined data set and P is the proportion of the combined set that exceeds the MDL); therefore, the discharger shall anticipate the number of samples required, based upon past monitoring results. The test shall be carried out at the 99% confidence level. If the analysis results in rejection of the Null Hypothesis (i.e., that there is no release), the discharger shall conclude that a release is tentatively indicated for that constituent or parameter; or
2. Non-Statistical Method. The discharger shall use the following non-statistical method for the VOC_{water} and VOC_{spg} Composite Monitoring Parameters and for all Constituents of Concern which are not amenable to the statistical tests under Part III.A.1.; each of these groupings of constituents utilizes a separate variant of the test, as listed below. Regardless of the variant used, the method involves a two-step process: (1) from all constituents to which the variant applies, compile a list of those constituents which exceed their respective MDL in the downgradient sample, yet do so in less than ten percent of the applicable background samples; and (2) (where several independent samples have been analyzed for that constituent at a given Monitoring Point) from the sample which contains the largest number of constituents. Background shall be represented by the data from all samples taken from the appropriate Background Monitoring Points during that Reporting Period (at least one sample from each Background Monitoring Point). The method shall be implemented as follows:
- a. For the Volatile Organics Composite Monitoring Parameter for Water Samples (VOC_{water}): For any given Monitoring Point, the VOC_{water} Monitoring Parameter is a composite parameter addressing all VOCs detectable using the appropriate USEPA method including at least all 47 VOCs listed in Appendix I to 40 CFR 258, and all unidentified peaks. Compile a list of each VOC which (1) exceeds its MDL in the Monitoring Point sample (an unidentified peak is compared to its presumed (MDL), and also (2) exceeds its MDL in less than ten percent of the samples taken during that Reporting Period from that medium's Background Monitoring Points. The discharger shall conclude that a release is tentatively indicated for the VOC_{water} Composite Monitoring Parameter if the list either (1) contains two or more constituents, or (2) contains one constituent that exceeds its PQL;
- b. For the Volatile Organics Composite Monitoring Parameter for Soil-Pore Gas Samples (VOC_{spg}): The VOC_{spg} Monitoring Parameter is a composite parameter for soil-pore gas addressing at least all 47 VOCs listed in Appendix I to 40 CFR 258, based upon either GC or GC/MS analysis of at least ten liter samples of soil-pore gas (e.g., collected in a vacuum canister). It involves the same scope of VOCs as does the VOC_{spg} Monitoring Parameter. Compile a list of each VOC which (1) exceeds its MDL in the Monitoring Point sample (as unidentified peak is compared to its presumed MDL), and also (2) exceeds its MDL in less than ten percent of the samples taken during that Reporting Period from the (soil-pore-gas) Background Monitoring Points. The discharger shall conclude that a release is tentatively indicated for the VOC_{spg} Composite Monitoring Parameter if the list either (1) contains two or more constituents, or (2) contains one constituent that exceeds its PQL; or

- c. For Constituents of Concern: Compile a list of constituents that exceed their respective MDL at the Monitoring Point yet do so in less than ten percent of the background samples taken during that Reporting Period. The discharger shall conclude that a release is tentatively indicated if the list either (1) contains two or more constituents, or (2) contains one constituent which exceeds its PQL.
3. Discrete Retest (Title 27, Section 25415 (e)(8)(E)). In the event that the discharger concludes that a release has been tentatively indicated (under Parts III.A.1. or III.A.2.), the discharger shall, within 30 days of this indication, collect two new suites of samples for the indicated Constituent(s) of Concern or Monitoring Parameter(s) at each indicating Monitoring Point, collecting at least as many samples per suite as were used for the initial test. Resampling of the Background Monitoring Points is optional. As soon as the data is available, the discharger shall rerun the statistical method (or non-statistical comparison) separately upon each suite of retest data. For any indicated Monitoring Parameter or Constituent of Concern at an affected Monitoring Point, if the test results of either (or both) of the retest data suites confirms the original indication, the discharger shall conclude that a release has been discovered. All retests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the Constituent of Concern or Monitoring Parameter which triggered the indication there, as follows:
 - a. If an ANOVA method was used, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two new suites of samples taken from the indicating Monitoring Point;
 - b. If the Method of Proportions statistical test was used, the retest shall consist of a full repeat of the statistical test for the indicated constituent or parameter, using the new sample suites from the indicating Monitoring Point;
 - c. If the non-statistical method was used:
 1. Because the VOC Composite Monitoring parameters (VOC_{water} or VOC_{spg}) each address, as a single parameter, an entire family of constituents which are likely to be present in any landfill release, the scope of the laboratory analysis for each retest sample shall include all VOCs detectable in that retest sample. Therefore, a confirming retest for either parameter shall have validated the original indication even if the suite of constituents in the confirming retest sample(s) differs from that in the sample which initiated the retest;
 2. Because all Constituents of Concern that are jointly addressed in the non-statistical testing under Part III.A.2.c. remain as individual Constituents of Concern, the scope of the laboratory analysis for the non-statistical retest samples shall be narrowed to involve only those constituents detected in the sample which initiated the retest.

B. RESPONSES TO VOC DETECTION IN BACKGROUND

1. Except as indicated in Part III.B.2., any time the laboratory analysis of a sample from a Background Monitoring Point, sampled for VOCs under Part III.A., shows either (1) two or more VOCs above their respective MDL, or (2) one VOC above its respective PQL, then the discharger shall immediately notify the Regional Board by phone that possible background contamination has occurred, shall follow up with written notification by certified mail within seven days, and shall obtain two new independent VOC samples from that Background Monitoring Point and send them for laboratory analysis of all detectable VOCs within thirty

days. If either or both the new samples validates the presence of VOC(s) at that Background Monitoring Point, using the above procedure, the discharger shall:

- a. Immediately notify the Regional Board regarding the VOC(s) verified to be present at that Background Monitoring Point, and follow up with written notification submitted by certified mail within seven days of validation; and
 - b. Within 180 days of validation, submit a report, acceptable to the Regional Board's Executive Officer, which examines the possibility that the detected VOC(s) originated from the Unit and proposing appropriate changes to the Monitoring Program.
2. If the Regional Board's Executive Officer determines, after reviewing the report submitted under Part III.B.1.b., that the detected VOC(s) most likely originated from the Unit, the discharger shall assume that a release has been detected and shall immediately begin carrying out the requirements of Part I.E.2.d.

SUMMARY OF SELF-MONITORING AND REPORTING PROGRAMS

A. GROUND WATER MONITORING

The ground water monitoring wells shall be sampled quarterly. The samples shall be analyzed for the following:

<u>Parameters & Constituents</u>	<u>Unit</u>	<u>Type of Samples</u>	<u>Reporting Frequency</u>
1. pH	Number	Grab	Quarterly
2. Total dissolved Solids	mg/L	Grab	Quarterly
3. Specific Conductance	Micromhos/cm	Grab	Quarterly
4. Temperature	°F	Grab	Quarterly
5. Chloride	mg/L	Grab	Quarterly
6. Sulfate	mg/L	Grab	Quarterly
7. Nitrate(as N)	mg/L	Grab	Quarterly
8. Ground water elevations Elevation (USGS Datum)	feet	Measurement	Quarterly
9. Volatile Organics (EPA Methods 8260)	µg/L	Grab	Quarterly

The collection, preservation and holding times of all samples shall be in accordance with U. S. Environmental Protection Agency approved procedures. All analyses shall be conducted by a laboratory certified by the State Department of Health Services to perform the required analyses.

B. GAS MONITORING

The discharger shall monitor the vadose zone and perimeter gas monitoring systems quarterly and report the findings to the Regional Board quarterly.

REPORTING

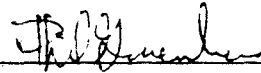
1. The discharger shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with waste discharge requirements.
2. Records of monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurement(s);
 - b. The individual(s) who performed the sampling or measurement(s);
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or method used; and
 - f. The results of such analyses.
3. Each report shall contain the following statement:

"I declare under the penalty of law that I have personally examined and am familiar with the information submitted in this document, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations."
4. A duly authorized representative of the discharger may sign the documents if:
 - a. The authorization is made in writing by the person described above;
 - b. The authorization specified an individual or person having responsibility for the overall operation of the regulated disposal system; and
 - c. The written authorization is submitted to the Regional Board's Executive Officer.
5. Report immediately any failure in the waste disposal system to the Regional Board's Executive Officer and the Director of the County Environmental Health Department by telephone with follow-up letter.
6. Monitoring reports shall be certified under penalty of perjury to be true and correct, and shall contain the required information at the frequency designated in this monitoring report.
7. Quarterly monitoring reports shall be submitted to the Regional Board in accordance with the following schedule.
 1. First quarter (January, February, and March) - report due by April 30
 2. Second quarter (April, May and June) - report due July 31
 3. Third quarter (July, August and September) - report due by October 31
 4. Fourth quarter (October, November and December) - report due by February 15
8. Annual monitoring reports shall be submitted to the Regional Board by February 15 of each year.

9. Five-year monitoring reports shall be submitted to the Regional Board by February 15 and July 31 (Spring/Fall COC alternating) of the 6th year.
10. Submit monitoring reports to:

California Regional Water Quality Control Board
Colorado River Basin Region
73-720 Fred Waring Drive, Suite 100
Palm Desert, CA 92260

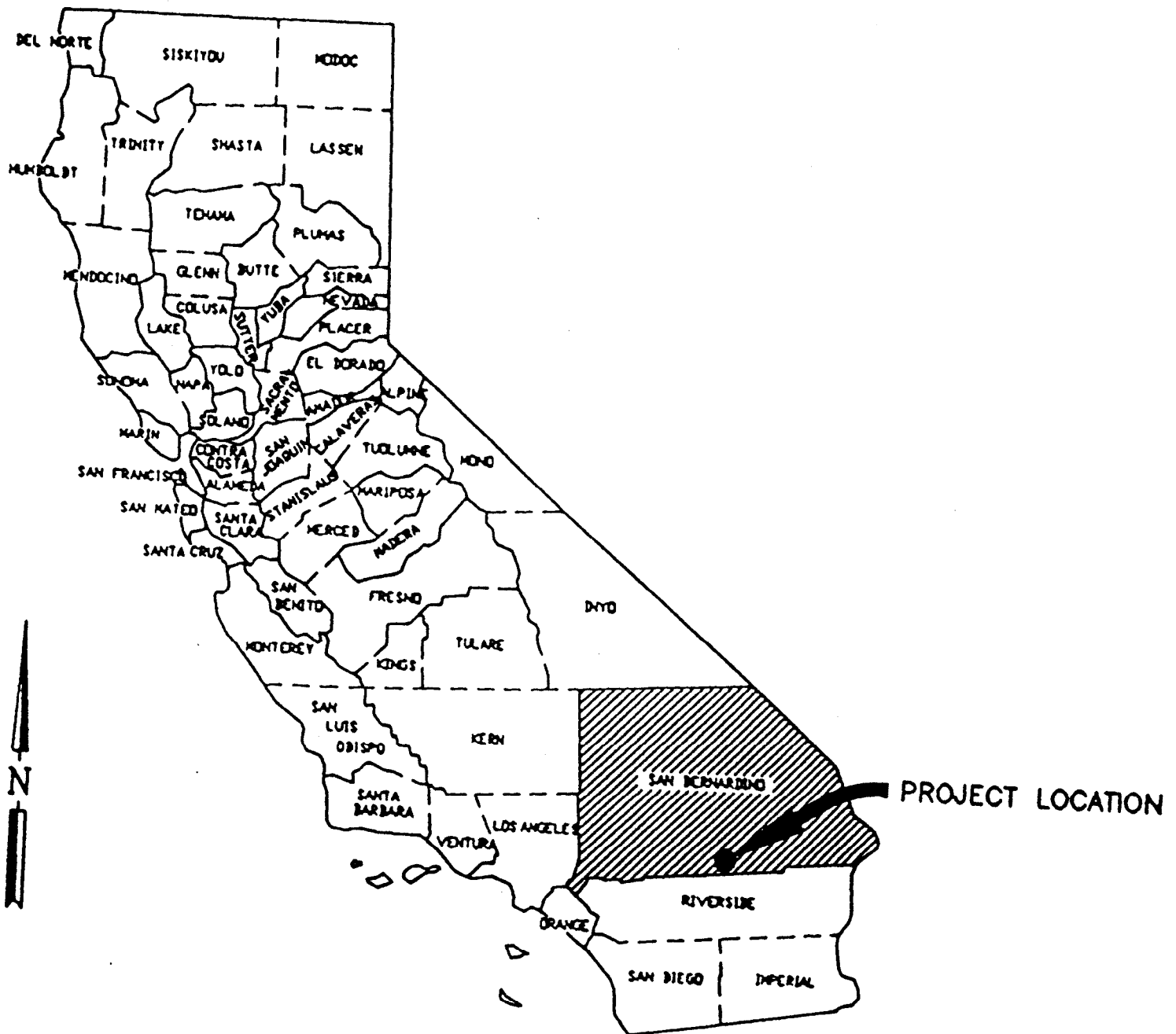
Ordered by:



Executive Officer

June 28, 2000

Date



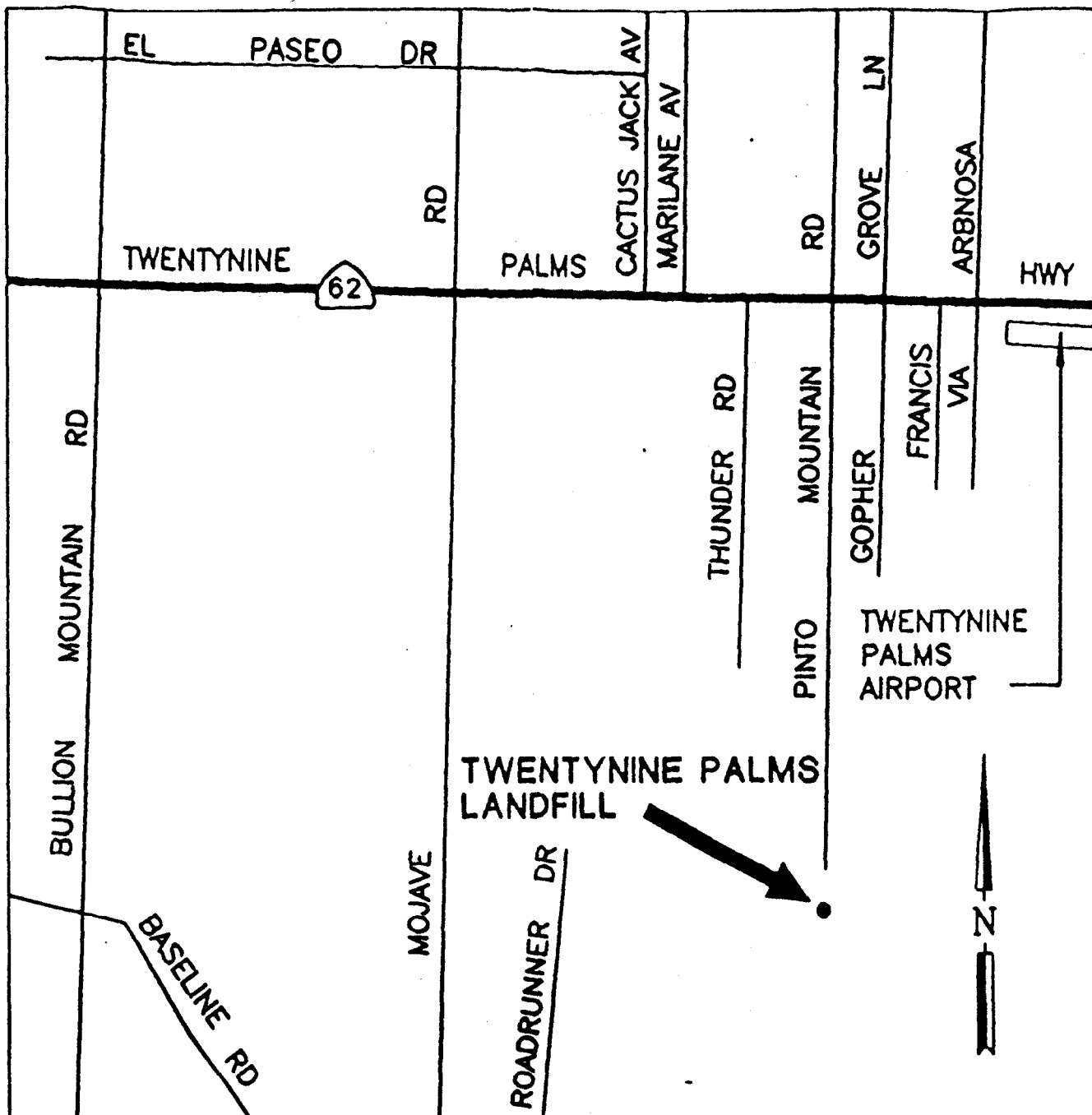
VICINITY MAP

ATTACHMENT A

UNITED STATES DEPARTMENT OF INTERIOR,
BUREAU OF LAND MANAGEMENT, OWNER/LESSOR
THE COUNTY OF SAN BERNARDINO
SOLID WASTE MANAGEMENT DEPARTMENT OPERATOR/LESSEE
TWENTYNINE PALMS SANITARY LANDFILL
CLASS III LANDFILL

located in a portion of the NW ¼ of unsurveyed future Section 5, T1S, R10E, SBB&M
Twentynine Palms - San Bernardino County

ORDER NO. 00-024



LOCATION MAP

ATTACHMENT B

UNITED STATES DEPARTMENT OF INTERIOR,
BUREAU OF LAND MANAGEMENT, OWNER/LESSOR
THE COUNTY OF SAN BERNARDINO
SOLID WASTE MANAGEMENT DEPARTMENT OPERATOR/LESSEE
TWENTYNINE PALMS SANITARY LANDFILL
CLASS III LANDFILL

located in a portion of the NW ¼ of unsurveyed future Section 5, T1S, R10E, SBB&M
Twentynine Palms - San Bernardino County

ORDER NO. 00-024

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**THE COUNTY OF SAN BERNARDINO
SOLID WASTE MANAGEMENT DEPARTMENT OPERATOR/LESSEE
TWENTYNINE PALMS SANITARY LANDFILL
CLASS III LANDFILL**

ORDER NO 00 024

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD-7

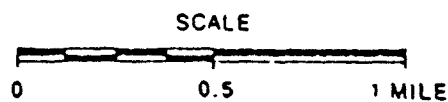
REV 2 REV 1
5-20 HH 3-25 RB

CN 8/5/87
8/5/87

CHECKED BY
APPROVED BY

DRAWN BY

DRAWING NUMBER 2406



LEGEND

- | | | | |
|--|-----|-------------------------------|-------------------|
| | Qds | QUATERNARY DUNE SAND | } CONTEMPORANEOUS |
| | Qa | QUATERNARY ALLUVIUM | |
| | Qoa | QUATERNARY OLDER ALLUVIUM | |
| | Qth | QUATERNARY TERRACE DEPOSITS | |
| | pTu | PRE-TERTIARY BASEMENT COMPLEX | |
| | | (UNDIFFERENTIATED) | |

ATTACHMENT D

FAULT, DASHED WHERE APPROXIMATE.
DOTTED WHERE CONCEALED

UNITED STATES DEPARTMENT OF INTERIOR,
BUREAU OF LAND MANAGEMENT, OWNER/LESSOR
THE COUNTY OF SAN BERNARDINO
SOLID WASTE MANAGEMENT DEPARTMENT OPERATOR/LESSEE
TWENTYNINE PALMS SANITARY LANDFILL
CLASS III LANDFILL
NW ¼ of unsurveyed future Section 5, T1S, R10E, SBB&M
Twentynine Palms - San Bernardino County

ORDER NO. 00-024

REV. I
3-8-91

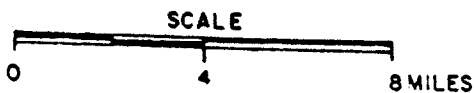
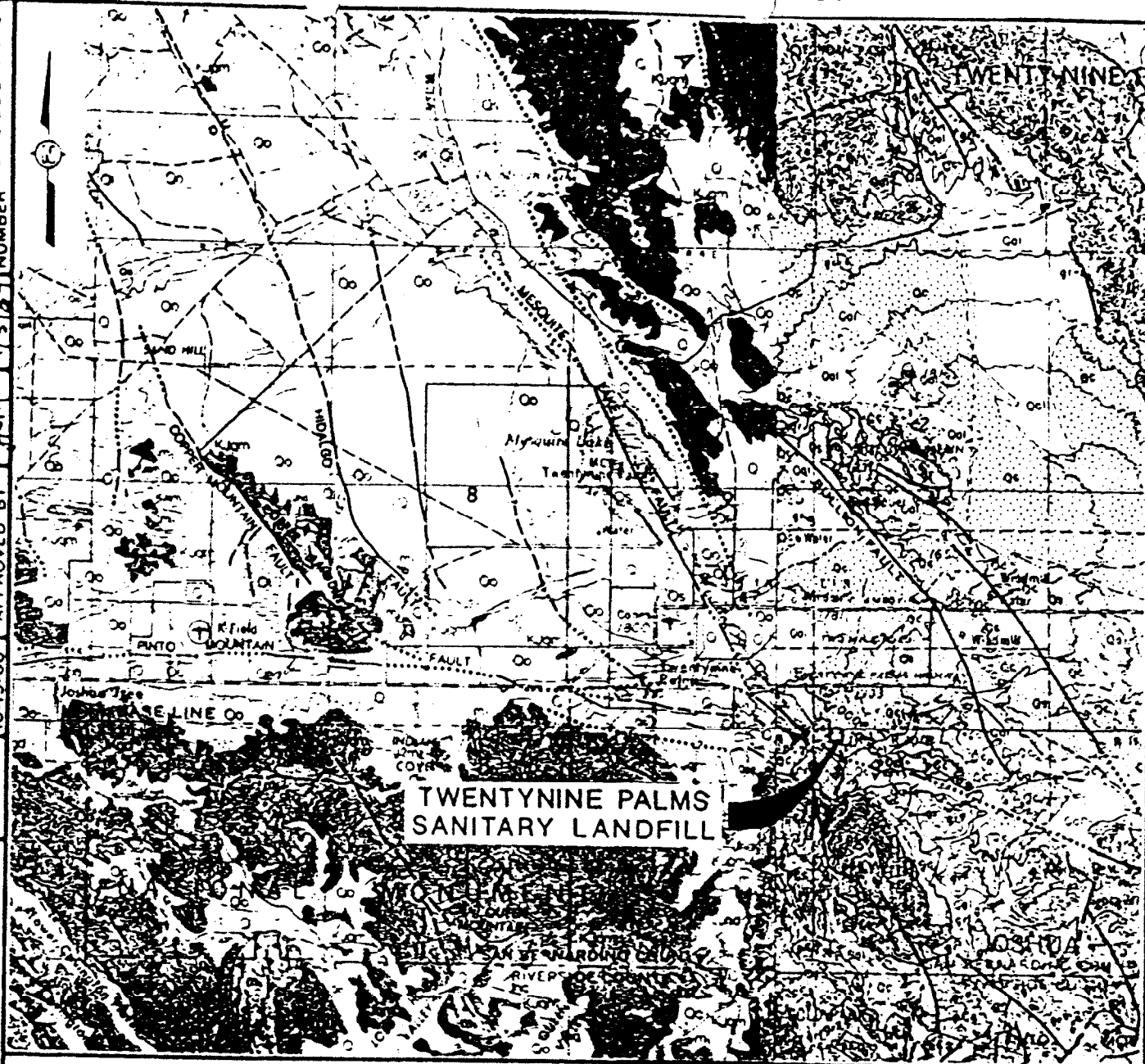
DRAWN BY
MM

CHECKED BY
TA

APPROVED BY
MM

DATE
10-19-88

DRAWING NUMBER
240653-A140

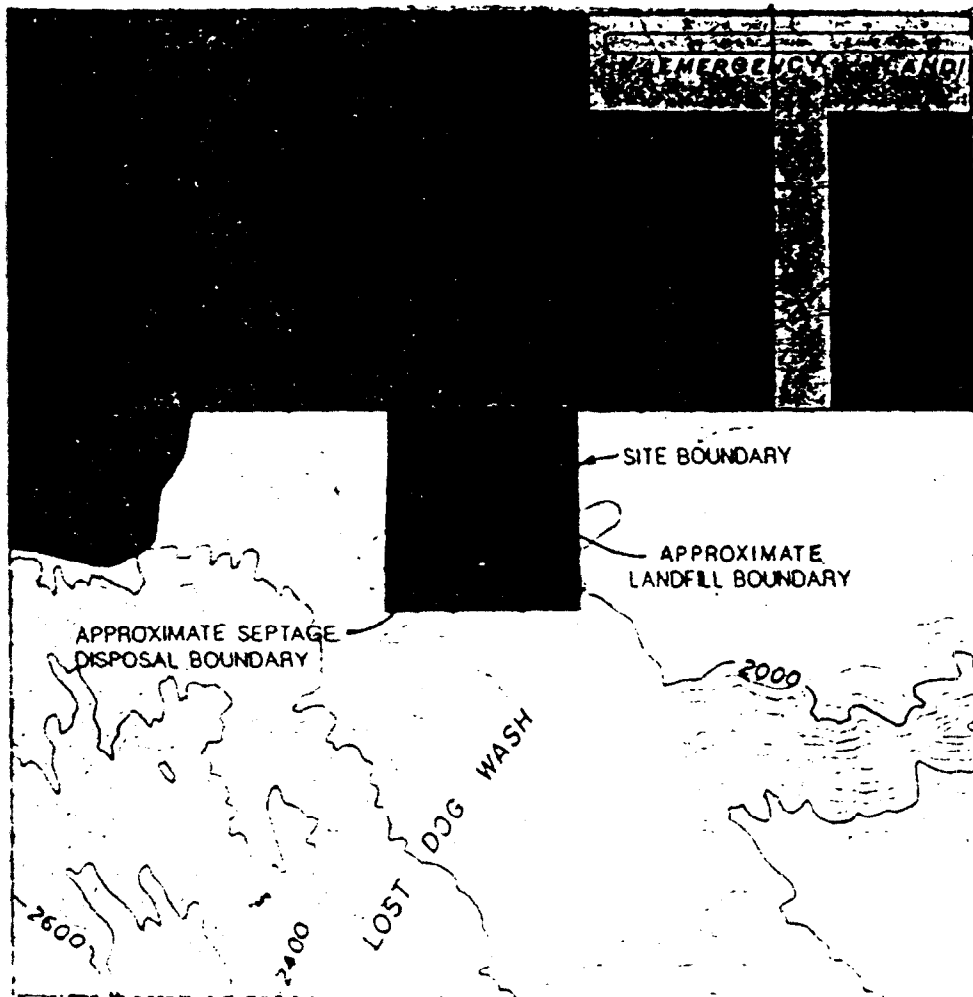


ATTACHMENT E

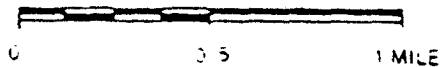
UNITED STATES DEPARTMENT OF INTERIOR,
BUREAU OF LAND MANAGEMENT, OWNER/LESSOR
THE COUNTY OF SAN BERNARDINO
SOLID WASTE MANAGEMENT DEPARTMENT OPERATOR/LESSEE
TWENTYNINE PALMS SANITARY LANDFILL
CLASS III LANDFILL

located in a portion of the NW ¼ of unsurveyed future Section 5, T1S, R10E, S8B&M
Twentynine Palms - San Bernardino County



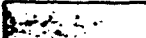

ORDER NO. 00-024



SCALE



LEGEND

-  RURAL LIVING
-  RURAL CONSERVATION
-  PUBLIC
-  WASTE SITE

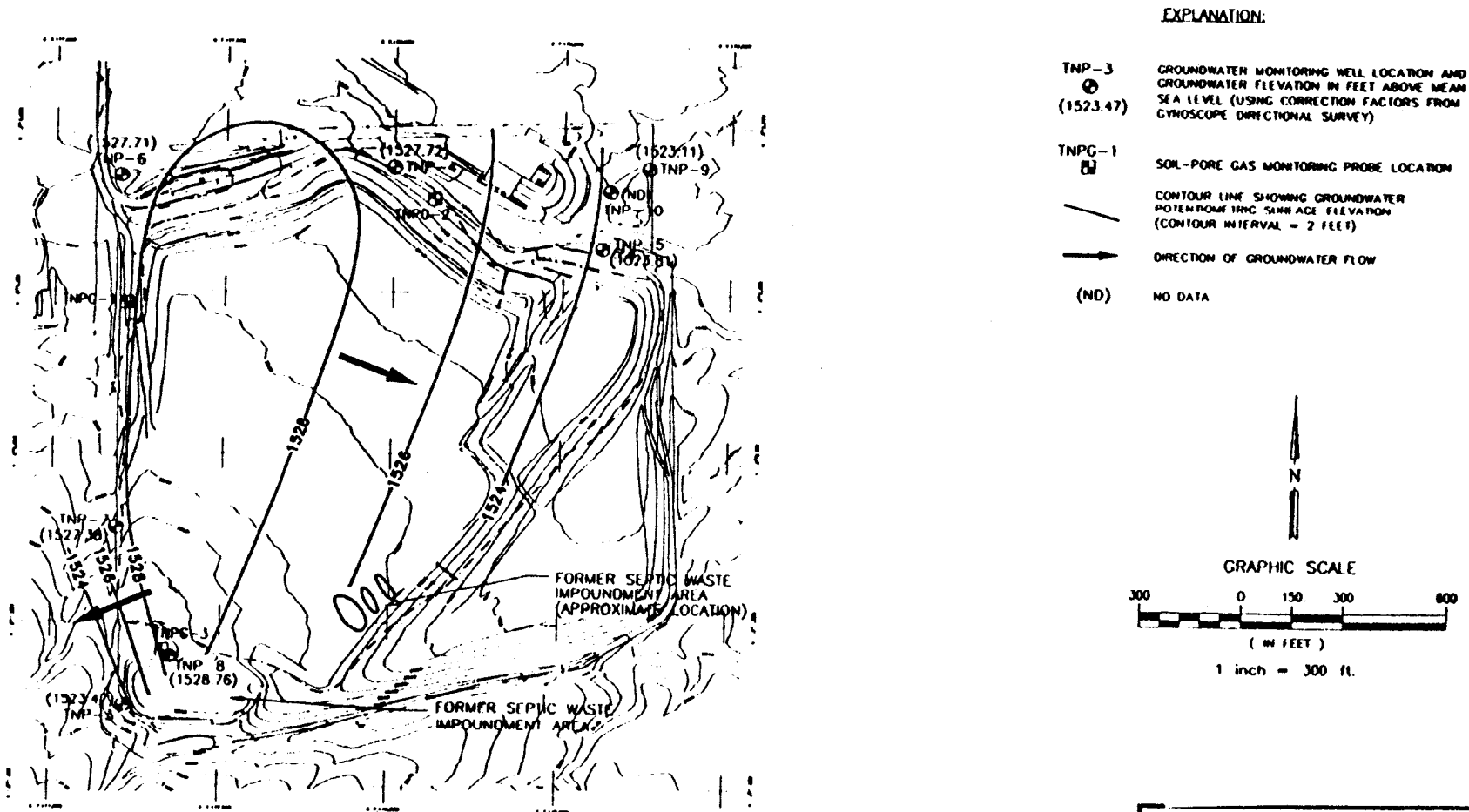
ATTACHMENT F

UNITED STATES DEPARTMENT OF INTERIOR,
BUREAU OF LAND MANAGEMENT, OWNER/LESSOR
THE COUNTY OF SAN BERNARDINO
SOLID WASTE MANAGEMENT DEPARTMENT OPERATOR/LESSEE
TWENTYNINE PALMS SANITARY LANDFILL
CLASS III LANDFILL

located in a portion of the NW 1/4 of unsurveyed future Section 5, T1S, R10E, SBB&M
Twentynine Palms - San Bernardino County

ORDER NO. 00-024

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD-7



REFERENCE:

SAN BERNARDINO COUNTY SOLID WASTE MANAGEMENT
DEPARTMENT, CAD MAP AS OF OCTOBER 27, 1990.

THE COUNTY OF SAN BERNARDINO
SOLID WASTE MANAGEMENT DEPARTMENT OPERATOR/LESSEE
TWENTYNINE PALMS SANITARY LANDFILL
CLASS III LANDFILL
located in a portion of the NW ¼ of unsurveyed future Section 5, T1S, R10E, SBB&M
Twentynine Palms - San Bernardino County

ORDER NO. 00 024

LEGEND

- EXISTING GROUND CONTOUR
- EXISTING ROAD
- FINISHED GRADE CONTOUR
- APPROXIMATE PROPERTY BOUNDARY
- EXISTING LIMITS OF WASTE
- TOP OF SLOPE
- EXISTING FENCE
- PROPOSED FENCE
- AC V-STITCH
- DIRECTION AND RATE OF SLOPE
- AC ACCESS ROAD
- AC SLOPE PROTECTION
- PROPOSED SETTLEMENT MONUMENT
- PROPOSED GAS MIGRATION MONITORING PROBE (DEPTH=36" TYPICAL)
- EXISTING GAS MIGRATION MONITORING PROBE
- EXISTING GROUNDWATER MONITORING WELL
- ABANDONED WELL
- EXISTING MOISTURE ZONE SOIL-PORE GAS MONITORING PROBE LOCATION
- HVC-11A
- HORIZONTAL/VERTICAL CONTROL MONUMENT (SEE SPEC. NO. 2)

ACREAGES

PROPERTY BOUNDARY = 70.7 ac
UNIT OF REFUSE = 40 ac

SURVEY CONTROL

MC-2
N=1671175.413
E=7177151.588
MON. EL.=2160.00
TARGET EL.=2162.15
FOUND 1" P. 8/16 STAMPED
L.S.D. SURV. DOWN 0.10

MC-3
N=1672973.010
E=7177125.000
MON. EL.=1998.00
TARGET EL.=1998.00
FOUND SPINE AND WASHOR, STAMPED
AS SHOWN, FLUSH

MC-5
N=1673030.960
E=7176825.001
MON. EL.=1998.00
TARGET EL.=1998.00
FOUND 1" P. 8/16 STAMPED
L.S.D. SURV. FLUSH

MC-10
N=1671106.822
E=7176851.004
MON. EL.=2024.75
TARGET EL.=2024.85
FOUND 1" P. 8/16 STAMPED
L.S.D. SURV. UP 0.10

MC-11A
N=1672968.240
E=7176825.001
MON. EL.=1998.00
TARGET EL.=1998.00
FOUND 1" P. 8/16 STAMPED
L.S.D. SURV. FLUSH

**COUNTY OF SAN BERNARDINO
WASTE SYSTEM DIVISION**

2

UNITED STATES DEPARTMENT OF INTERIOR,
BUREAU OF LAND MANAGEMENT, OWNER/LESSOR
THE COUNTY OF SAN BERNARDINO
SOLID WASTE MANAGEMENT DEPARTMENT OPERATOR/LESSEE
TWENTYNINE PALMS SANITARY LANDFILL
CLASS III LANDFILL

ORDER NO. 00-024